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## (54) Infant's drinking cup

(57) An infant's drinking cup comprises a receptacle (1) for liquid, having a top wall (2), preferably in the form of a detachable cap, provided with externally projecting spout means (5,6) for placing in the mouth having one or more small openings (7) providing a restricted flow path from the receptacle suitable for an infant to suck liquid therethrough, the inlet to the spout means from the cup interior being disposed at a spacing from the periphery of the upper part of the receptacle which is great enough to ensure that if the receptacle is laid on its side on a substantially horizontal surface the level of the maximum normal filling of liquid in the receptacle will not reach the inlet to the spout means.

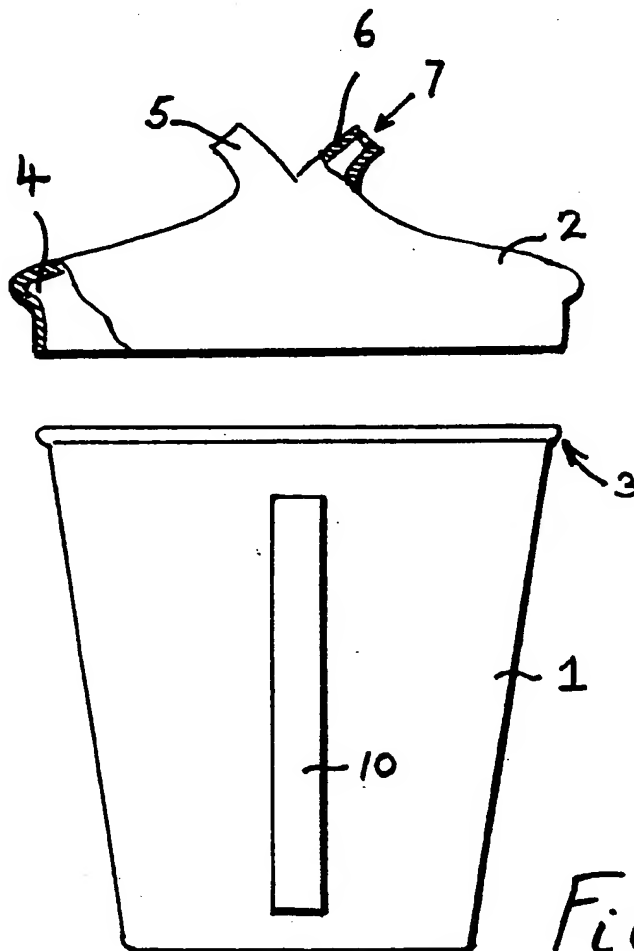


Fig. 3

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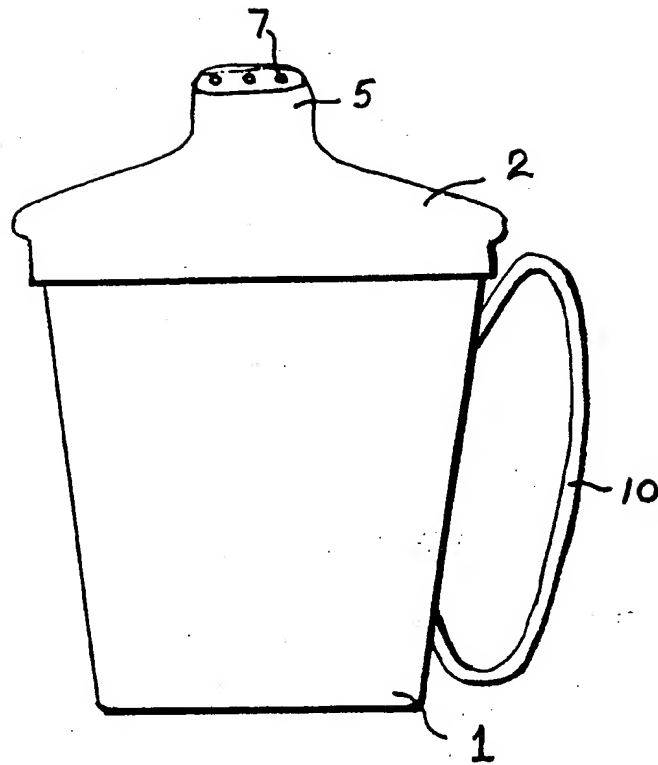
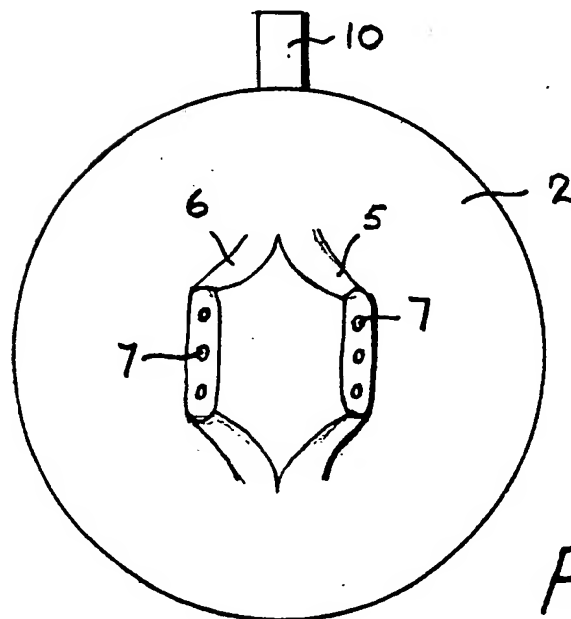
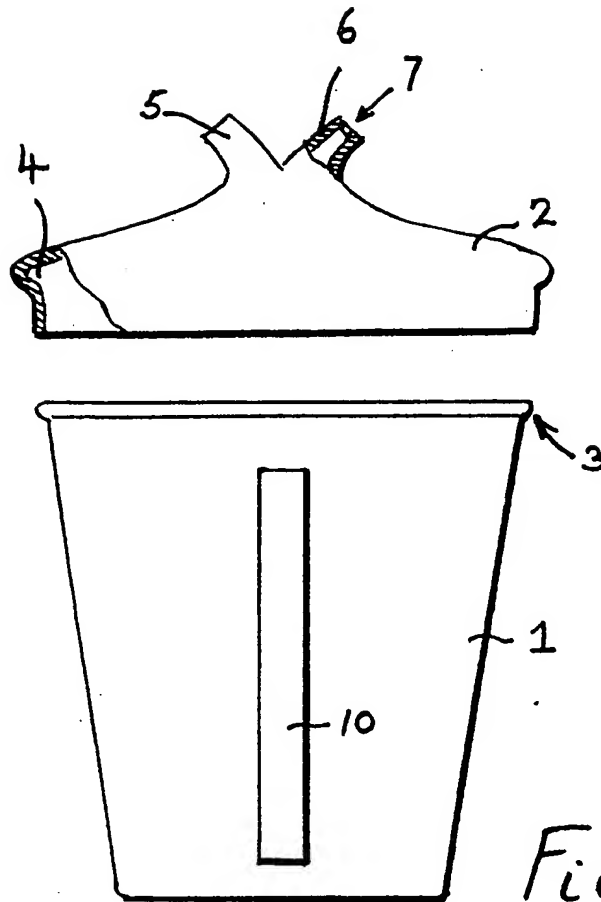


Fig. 1



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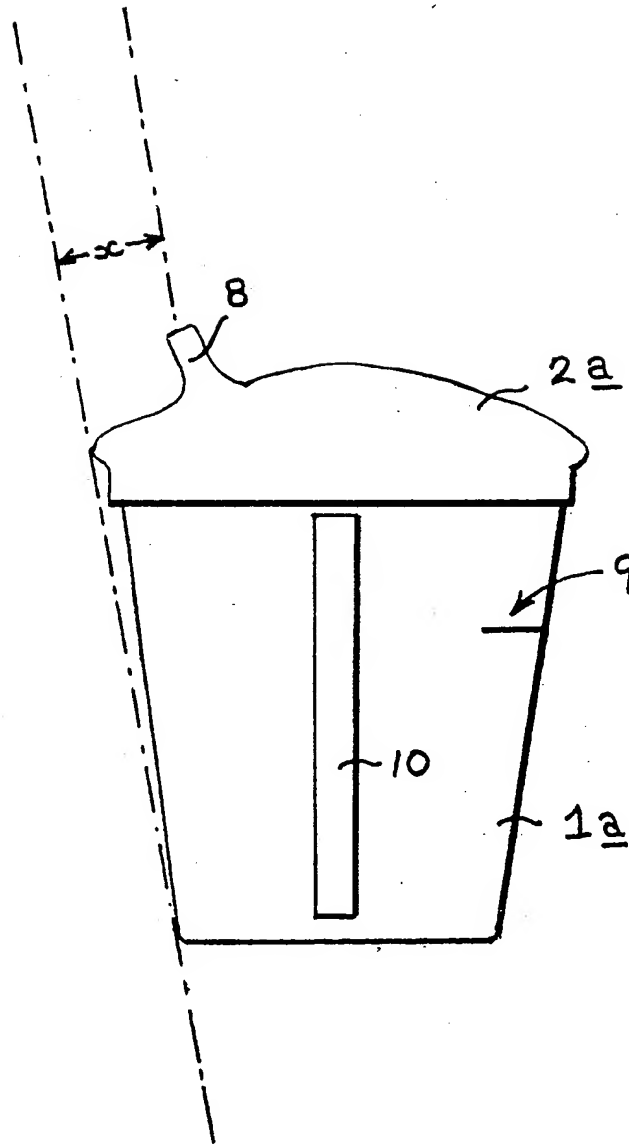


Fig. 4

## SPECIFICATION

## Infant's drinking cup

5 This invention relates to a drinking cup suitable for use by an infant capable of sucking liquid out through a spout.

A known form of such feeding cup has a container with a removable cap or cover provided with a dispensing spout disposed at or closely adjacent to the periphery of the cap so that the infant can suck liquid out readily from one side of the cup when it is tilted slightly towards it.

15 With such known feeding cup there is a disadvantage that if the cup is accidentally knocked over, or is placed down on a surface on its side, the remaining liquid in the cup can often reach the outlet opening(s) of the spout and thus be spilled onto the surface.

It is accordingly the object of the present invention to provide an improved infant's drinking cup with which, provided that it is not overfilled, the level of any liquid remaining in the cup with not reach the outlet opening(s) when the cup is lying on its side on a surface, whereby spillage onto the surface is avoided.

According to the present invention an infant's drinking cup comprises a receptacle, for liquid, having a top wall provided with externally projecting spout means for placing in the mouth having one or more small openings providing a restricted flow path from the receptacle suitable for an infant to suck liquid therethrough, the inlet to the spout means from the cup interior being disposed at a spacing from the periphery of the upper part of the receptacle which is great enough to ensure that if the receptacle is laid on its side on a substantially horizontal surface the level of the maximum normal filling of liquid in the receptacle will not reach the inlet to the spout means.

With such a structure, irrespective of whether the receptacle still has its complete initial charge of liquid or whether some has been discharged, the tipping over or placing down on its side of the drinking cup with not result in dribbling out of the liquid from the spout means.

Advantageously, the receptacle is provided with a "maximum filling" level indicator at a position selected to ensure that not more than the correct maximum quantity of liquid is inserted.

The receptacle may conveniently comprise an open-topped container, and a cap to fit in liquid-tight manner thereon. In a preferred form of construction, the rim of the container, and the cap, are provided with inter-fitting tenon-and-recess formations to ensure a firm but removable engagement of the cap on the container.

The spout means may comprise a single spout member through which the liquid con-

tents can be sucked and through which replacement air can thereafter enter the receptacle when the seal between the spout and the mouth is broken, e.g. when the spout is taken out of the mouth. In another form, the spout means comprises a pair of spouts disposed at a spacing transversely of the top wall of the receptacle such that, with the cup held somewhat inclined, the lowermost spout can be used for sucking out liquid whilst the upper spout will simultaneously permit the entry of air to replace the liquid being dispensed. Preferably the two spouts are disposed symmetrically one at each side of a central line of the top wall of the receptacle.

The receptacle may advantageously be generally made broader at its end adjacent to the spout means than at its end remote from the spout means, thereby to tend to position the spout means, when the receptacle is lying on its side, at a greater height above the level of the liquid contents than would be the case with a receptacle of about the same width at its upper and lower ends. By way of example, the receptacle may include a portion of frusto-conical shaping having the broader end nearer to the spout means. Where the receptacle is in the form of a container and a cap, the container as a whole may be frusto-conical.

Preferably, the open topped container portion of the receptacle may be filled to one third of its height without exceeding the said maximum normal filling level.

More preferably the open topped container portion may be filled to at least half its height, more preferably at least 60% of its height, without exceeding said maximum normal filling level.

Preferably, the said small opening or openings have a diameter of less than 2 mm, preferably less than 1.5 mm, more preferably less than 1 mm, e.g. less than 0.5 mm.

In order that the nature of the invention may be readily ascertained, two embodiments of infant's drinking cup are hereinafter particularly described with reference to the accompanying drawings, wherein:-

*Figure 1* is a front elevation of a first embodiment, seen in assembled condition;

*Figure 2* is a plan view;

*Figure 3* is a side elevation, seen with the parts in separated condition;

*Figure 4* is a side elevation of a second embodiment.

Referring to Figs. 1 to 3, the infant's drinking cup comprises a container 1 having a removable cap 2.

The container 1 has at its open upper end an external lip 3 to provide a liquid-tight firm engagement with the cap 2. Referring to Fig. 3, the cap 2 is formed with an internal circumferential recess 4 into which the lip 3 can be forced manually, with resilient deformation of the material of the container and cap.

At a generally central position, the cap 2 is

formed with two similar spouts 5, 6 both of which are hollow and communicate with the interior of the cap. In each spout, on the end face thereof, there are provided three holes 7 which can serve both for outlet of liquid from the cup, and for entry of air into the cup to replace the liquid being dispensed. In use, the infant can suck liquid from either one of the spouts 5 and 6, and air will enter at the same time through the other spout.

The container 1 has a frusto-conical side wall, with the broader end adjacent to the spouts 5, 6. Accordingly, when the cup is inadvertently knocked over on its side, or is laid down on its side, the two spouts 5, 6 become positioned at a somewhat higher level than would be the case if the cup were cylindrical, with consequently lessening of risk of the liquid level in the cup reaching the lowermost of the two spouts and dribbling out. The risk of inadvertent spillage is thus lessened or avoided both by the generally central positioning of the spouts 5, 6 i.e. at almost the maximum possible separation from the rim of the cap, and also by the frusto-conical formation of the container.

Referring now to Fig. 4 there is shown a second embodiment of cup wherein the container 1a is substantially identical to that of the first embodiment, including a peripheral lip. The cap 2a is engaged on the container 1a in similar manner to the first embodiment, but is differently shaped so as to have only a single spout 8, which is offset by a distance  $x$  from the line common to the two points of contact of the cup if it is tipped over on its side on a surface. Providing that the quantity of liquid in the cup is not such as to reach the level of the spout holes, i.e. a depth  $x$  of liquid in the cup, no liquid will dribble out onto the supporting surface.

As a precaution against overfilling, the container can be provided with a filling level line 9.

The degree to which the spout 8 is offset away from the apex of the cap 2a can be less than shown, or zero, i.e. the spout 8 can be substantially central on the cap.

With the embodiment of Fig. 4, in which only a single spout 8 is provided, there is no separate path of entry for air to replace the liquid being sucked out. However, due to the inevitable presence of air space in the container, above the level of the liquid, there is always a possibility of sucking out a small quantity of the liquid, with consequent reduction of pressure in the container and/or slight inward deformation of the wall of the container, whereafter air can enter, at the next time of relinquishing the spout 8, to replace the liquid withdrawn.

Many variations of the illustrated embodiment are possible within the scope of the invention. For instance the two spouts of the embodiment of Fig. 1 may be longer than il-

lustrated to increase the separation between their ends to approaching the diameter of the cup.

Also, the spout may be provided with an inlet tube routed within the cup to a position closer to the cup axis than the exterior root of the spout would suggest.

#### CLAIMS

1. An infant's drinking cup comprising a receptacle for liquid, having a top wall provided with externally projecting spout means for placing in the mouth having one or more small openings providing a restricted flow path from the receptacle suitable for an infant to suck liquid therethrough, the inlet to the spout means from the cup interior being disposed at a spacing from the periphery of the upper part of the receptacle which is great enough to ensure that if the receptacle is laid on its side on a substantially horizontal surface the level of the maximum normal filling of liquid in the receptacle will not reach the inlet to the spout means.

2. A cup as claimed in Claim 1, provided with a "maximum filling" level indicator at a position selected to ensure that not more than the correct maximum quantity of liquid is inserted.

3. A cup as claimed in Claim 1 or Claim 2, which comprises an open-topped container, and a cap to fit in liquid-tight manner thereon.

4. A cup as claimed in Claim 3, wherein the rim of the container, and the cap, are provided with inter-fitting tenon-and-recess formations to provide a firm but removable engagement of the cap on the container.

5. A cup as claimed in any preceding claim wherein the spout means comprises a pair of spouts disposed at a spacing transversely of the top wall of the receptacle such that, with the cup held somewhat inclined, the lowermost spout can be used for sucking out liquid whilst the upper spout will simultaneously permit the entry of air to replace the liquid being dispensed.

6. A cup as claimed in Claim 5, wherein the two spouts are disposed symmetrically one at each side of a central line of the top wall of the receptacle.

7. A cup as claimed in any preceding claim, wherein the receptacle is broader at its end adjacent to the spout means than at its end remote from the spout means, thereby to tend to position the spout means, when the receptacle is lying on its side, at a greater height above the level of the liquid contents than would be the case with a receptacle of about the same width at its upper and lower ends.

8. A cup as claimed in Claim 7, wherein the receptacle includes a portion of frusto-conical shaping having the broader end nearer to the spout means.

9. A cup as claimed in Claim 3, wherein

the container is frusto-conical.

10. A cup as claimed in Claim 3 or Claim 9, wherein the open topped container is shaped that it may be filled to one third of its height without exceeding the said maximum normal filling level.

11. A cup as claimed in Claim 10, wherein the open topped container is so shaped that it may be filled to at least half its height without exceeding said maximum normal filling level.

12. A cup as claimed in Claim 11, wherein the said small opening or openings have a diameter of less than 2 mm.

13. A cup as claimed in Claim 12, wherein the said small openings have a diameter of less than 1mm.

14. An infant's drinking cup substantially as hereinbefore described with reference to and as illustrated in Figs. 1 to 3 or Fig. 4 of the accompanying drawings.

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